REMARKS

At the outset, Applicants' Attorney would like to sincerely thank Examiner Naff for all the time and courtesies extended during the telephonic interview of July 20, 2005. During the interview, the 35 U.S.C. 112, second paragraph rejections were discussed, as well as proposed revisions to independent claim 6 and proposed new claims.

The Office Action of April 1, 2005 has been received and carefully reviewed. It is submitted that, by this Communication, all bases of rejection and objection are traversed and overcome. Upon entry of this Communication, claims 6-19 and 30-34 remain in the application. New claims 35-42 have been added to set forth additional specific embodiments of Applicants' invention. Reconsideration of the claims as revised is respectfully requested.

It is to be understood that amendments of the originally filed claims, or cancellation of any claims should in no way be construed as an acquiescence, narrowing, or surrender of any subject matter. The amendments are being made not only to particularly point out and distinctly claim the subject matter that Applicants regard as the invention, but also to expedite prosecution of the present application. Applicants reserve the option to prosecute the originally filed claims further, or similar ones, in the instant or subsequently filed patent applications.

Furthermore, silence with regard to any of the Examiner's rejections is not indicative of acquiescence to such rejections. Specifically, silence with regard to the Examiner's rejection of a dependent claim, when such claim depends from an independent claim that Applicants consider allowable for reasons provided herein, is not an acquiescence to such rejection of the dependent claim(s), but rather a recognition by Applicants that such previously lodged rejection is moot based on Applicants' remarks and/or amendments relative to the independent claim (that Applicants consider allowable) from which the dependent claim(s) depends.

Claims 6-10 and 30-34 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner states that in bridging lines 2 and 3 of claim 1 and in line 3 of claim 30 (and where recited in other claims), "nitrite reductase-like activity" is uncertain as to meaning and scope. The Examiner contends that being "like" nitrite reductase is relative and subjective, and it would be uncertain as to catalytic agents that are like and not like nitrite reductase. Also, the Examiner argues that in line 5 of claim 6 and in bridging lines 2

and 3 of claim 30 (and where recited in other claims), "biomimetic catalytic agent" is uncertain as to meaning and scope. The Examiner asserts that the line of demarcation between biomimetic and non-biomimetic catalytic agents is uncertain.

Applicants do not acquiesce to the Examiner's rejection. However, in order to expedite prosecution, Applicants have amended the claims to remove the phrases "nitrite reductase-like activity" and "biomimetic catalytic agents." Independent claim 6 now recites that the catalytic agent includes "a macrocyclic ligand." Support for this recitation may be found in the substitute specification as filed on December 29, 2004 at least at page 3, lines 13-24. As such, Applicants respectfully submit that the rejection of claims 6-10 and 30-34 under 35 U.S.C. § 112, second paragraph, has been traversed and overcome.

Claims 6-8 and 10-12 stand rejected under 35 U.S.C. 102(b) as being anticipated by Fauquex et al. (US Patent No. 5,990,289) or Staples et al. (US Patent No. 5,169,936). The Examiner states that Fauquex and Staples each disclose Cu(II) bound to a polymeric material via a chelating group, specifically for use in purifying proteins. The Examiner concludes that Applicants' claimed material is Cu(II) bound to a polymeric material, as disclosed in Fauquex or Staples. The Examiner further concludes that the Cu(II) is inherently capable of functioning as a nitrite reductase when in contact with blood to produce nitric oxide. The Examiner also states that the chelating group (of Fauquex and Staples) is a ligand as required by Applicants' claims that require a ligand, and results in a Cu(II) metal ion ligand complex as recited in claim 8.

Applicants have amended claim 6 to recite that the catalytic agent includes a macrocyclic ligand. Support for this recitation may be found in the substitute specification as filed at least at page 3, lines 18-24. Neither Fauquex nor Staples teach or suggest chelating groups that are macrocyclic ligands. In sharp contrast, the catalytic agent of Applicants' amended claim 6 includes a macrocyclic ligand.

Further, Applicants respectfully disagree with the Examiner's assertion that Cu(II) is inherently capable of functioning as a nitrite reductase. Neither Fauquex nor Staples teaches that the compounds used are capable of converting nitrosothiols or nitrite to NO. The compounds taught in these references are capable of binding copper. However, Applicants respectfully submit that the binding capability of a compound is not indicative that the compound also has nitrite reductase or nitrosothiol reductase activity.

For all the reasons stated above, it is respectfully submitted that Applicants' invention as defined in claims 6-8 and 10-12, and those claims depending ultimately therefrom, are not anticipated, taught or rendered obvious by Fauquex or Staples, either alone or in combination, and patentably defines over the art of record.

Claims 15-18 and 30-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sivan et al. (US Patent No. 6,569,688) in view of Fauquex et al. or Staples et al., each taken with Fanning et al (US Patent No. 5,858,792), and if necessary further in view of Tedeschi et al. (US Patent No. 6,645,518).

The Examiner states that Sivan et al. discloses an intravascular apparatus (such as a stent), which may be made of a metal containing an immobilized enzyme, such as a nitrogen oxide synthase, to produce nitric oxide. The Examiner reiterates his comments in regards to the 102(b) rejection regarding Fauquex et al. and Staples et al. Further, the Examiner goes on to state that Fanning et al. discloses using copper to reduce nitrate to nitrite, and measuring nitrite from the nitrite produced nitric oxide. The Examiner continues by stating that Tedeschi et al. discloses a medical device (such as a stent) having a nitric oxide releasing coating. In conclusion, the Examiner asserts that it would have been obvious to immobilize Cu(II) in place of the nitrogen oxide synthase of Sivan, as suggested by Fauquex or Staples immobilizing Cu(II) on a polymeric material since it would have been expected from Fanning that Cu can reduce nitrite to produce nitric oxide. Furthermore, the Examiner argues that Tedeschi further suggests a nitric oxide releasing coating on a medical device.

Applicants again respectfully submit that none of the cited references teaches or suggests a catalytic agent including a macrocyclic ligand, as recited in Applicants' claims 15-18. As such, it is submitted that the combination of the cited references would not render Applicants' invention as defined in claims 15-18.

In regard to claims 30-33, Applicants respectfully submit that none of the cited references teaches or suggests the use of a metal ion ligand complex, where the ligand has a "planar square geometry." Support for this revision may be found in the substitute specification at least at page 3, lines 13-22. It is submitted that one skilled in the art is cognizant of the fact that planar square geometry has the metal ion at the center with four atoms/groups bonded at the four corners. (See attached Exhibit 1, Masterson, W. L., Slowinski, E. J., & C. L. Stanitski, Chemical Principles, pages 456-457 (5th ed., 1981)).

Further, none of the cited references teaches or suggests a material or a medical device that includes a catalytic agent or a complex (as defined by the Applicants) available at the surface thereof that has nitrite reductase or nitrosothiol reductase activity.

Claim 30 has been amended to recite that the metal ion ligand complex is capable of converting nitrite/nitrate or nitrosothiols to nitric oxide when in contact with at least one of a body and body fluids. Support for this recitation may be found in the substitute specification at least at page 2, lines 25-33 and at page 3, lines 31-33.

Further, in regard to claims 30-33, Applicants point out that Fanning is directed to a method for measuring the concentration of nutrients in the *upper layers of the ocean,* not to a medical device used in biomedical applications. As such, it is submitted that the skilled artisan would not be led to combine Fanning with Fauquex or Staples as suggested by the Examiner.

For all the reasons stated above, it is submitted that Applicants' invention as defined in claims 15-18 and 30-33 is not anticipated, taught or rendered obvious by the cited references, either alone or in combination, and patentably defines over the art of record.

The Examiner indicates that claims 9, 13, 14, 19 and 34 are free of the cited art. As such, Applicants have amended claims 9, 13, 19 and 34 to include the limitations of the base claim and any intervening claims. Claim 14 depends from amended claim 13. Applicants respectfully submit that the rewritten claims and those claims depending therefrom are in a condition suitable for allowance.

New claims 35-42 have been added. Support for these new claims may be found throughout the original specification and claims as filed. More specifically, support for new claims 37 and 38 may be found in the substitute specification at least at page 3, lines 13-25. Support for new claims 39 and 40 may be found in the substitute specification at least at page 9, lines 8-17. Still further, support for new claims 35 and 41 may be found throughout the substitute specification and in Figure 6 of the corrected drawings filed on December 29, 2004. New claim 42 recites that the ligand of the metal ion ligand complex has a "planar square geometry." As previously stated, support for this revision may be found in the substitute specification at least at page 3, lines 13-22. It is again submitted that one skilled in the art is cognizant of the fact that planar square geometry has the metal ion at the center with four atoms/groups bonded at the four corners. (See attached Exhibit 1, Masterson, W. L., Slowinski, E. J., & C. L. Stanitski, Chemical Principles, pages 456-457 (5th ed., 1981)).

In summary, claims 6-19 and 30-34 remain in the application. New claims 35-42 have been added in order to set forth additional specific embodiments of Applicants' invention. It is submitted that, through this amendment, Applicants' invention as set forth in these claims is now in a condition suitable for allowance.

Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, he is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

DIERKER & ASSOCIATES, P.C.

Julia Church Dierker
Attorney for Applicants
Registration No. 33368
(248) 649-9900, ext. 25
juliad@troypatent.com

3331 West Big Beaver Rd., Suite 109
Troy, Michigan 48084-2813
Dated: July 28, 2005
JCD/JRK/jrk